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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LE, MIRANDA	

ART UNIT	PAPER NUMBER
2167	

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,273	HOULE, MICHAEL EDWARD	
	Examiner	Art Unit	
	Miranda Le	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *10-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I, Claims 1-9 drawn to a method for generating data structures for information retrieval of documents stored in a database, classified in Class 707, subclass 100.

Group II, Claims 10-17, drawn to a graphical user interface system for graphically presenting estimated clusters on a display device in response to a user query, classified in Class 707, subclass 102.

The inventions are distinct, each from the other because of the following reasons:

Inventions I, II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, each of the respective inventions have a separate utility as in a system not having the others. See M.P.E.P. § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for the other Groups, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Richard Goldman on June 15, 2006, a provisional election was made with traverse to prosecute the invention of claims 1-9. Affirmation of this election must be made by applicant in responding to this Office action. Claims 10-15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

Drawings

2. The drawings are objected to under 37 CFR 1.84(h)(5) because Figure 15 shows modified forms of construction in the same view. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number

of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: in Fig. 4, a collection of patches (a 7-patch, a 12-patch,and an 18-patches (see Specificaltion, page 20, lines 16-17; and in Fig. 5, clusters A and B which include 8 and 10 vectors; CONF (C_i'; C_i) = 2/5 = 40% (see Specification, page 21, lines 1-6). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 fails to provide a practical application that produces a useful, concrete and tangible result. Specifically, a tangible result, in accordance with the current "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" is a real world result. It is suggested that the issue would be fixed by including the limitation wherein "the cluster estimation subsystem selects said patches depending on said inter-patch confidence values to represent clusters of said document-keyword vectors.

Further, each of the subsystem is reasonably interpreted in view of the specification as just software, the claimed system is not limited to embodiments which includes the hardware necessary to enable any underlying functionality to be realized, instead being software per se.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Tang et al. (US Patent No. 6,636,849).

Tang anticipated independent claims 1, 4, 6, 8 by the following:

As per claim 1, Tang teaches a computer system for generating data structures for information retrieval of documents stored in a database, said documents being stored as document-keyword vectors generated from a predetermined keyword list, and said document-keyword vectors forming nodes of a hierarchical structure imposed upon said documents *(i.e.,*

textual or byte-based searches, literature search based on lists of keywords, and vector and matrix based indexing and searching, Abstract), said computer system comprising:

a neighborhood patch generation subsystem for generating groups of nodes having similarities as determined using a search structure *(i.e. a multigrid tree, col. 4, lines 39-54)*, said neighborhood patch generation subsystem including a subsystem for generating a hierarchical structure upon said document-keyword vectors and a patch defining subsystem for creating patch relationships among said nodes *(i.e. multiple level of grids, col. 11, lines 18-27)* with respect to a metric distance between nodes *(i.e. L1 distance, col. 10, line 61 to col. 11, line 5) (Figs. 5, 8A-B) (col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

a cluster estimation subsystem for generating cluster data of said document-keyword vectors *(i.e. a subset of grids, col. 11, lines 6-18)* using said similarities of patches *(col. 4, line 55 to col. 5, line 17, col. 10, line 61 to col. 11, line 27; col. 13, line 61 to col. 14, line 16).*

As per claim 4, Tang teaches a method for generating data structures for information retrieval of documents stored in a database, said documents being stored as document-keyword vectors generated from a predetermined keyword list, and said document-keyword vectors forming nodes of a hierarchical structure imposed upon said documents *(i.e. , textual or byte-based searches, literature search based on lists of keywords, and vector and matrix based indexing and searching, Abstract)*, said method comprising the steps of:

generating a hierarchical structure *(i.e. multigrid tree, col. 4, lines 39-54)* upon said document-keyword vectors and storing hierarchy data in an adequate storage area *(Figs. 5, 8A-B) (col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

generating neighborhood patches of nodes having similarities as determined using levels of the hierarchical structure *(i.e. multiple level of grids, col. 11, lines 18-27)*, and storing said patches in an adequate storage area *(Figs. 5, 8A-B; col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

invoking said hierarchy data and said patches to compute inter-patch confidence values *(i.e. L1 distance, col. 10, line 61 to col. 11, line 5)* between said patches and intra-patch confidence values *((i.e. a radius, col. 11, lines 6-18)*, and storing said values as corresponding lists in an adequate storage area *(col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);* and

selecting said patches *(i.e. a subset of grids, col. 11, lines 6-18)* depending on said inter-patch confidence values and said intra-patch confidence values to represent clusters of said document-keyword vectors *(col. 4, line 55 to col. 5, line 17, col. 10, line 61 to col. 11, line 27; col. 13, line 61 to col. 14, line 16).*

As per claim 6, Tang teaches a program for making a computer system execute a method for generating data structures for information retrieval of documents stored in a database, said documents being stored as document-keyword vectors generated from a predetermined keyword list, and said document-keyword vectors forming nodes of a hierarchical structure introduced into said documents *(i.e. , textual or byte-based searches, literature search based on lists of keywords, and vector and matrix based indexing and searching, Abstract)*, said program making said computer system execute the steps of:

generating a hierarchical structure *(i.e. multigrid tree, col. 4, lines 39-54)* upon said document-keyword vectors and storing hierarchy data in an adequate storage area *(Figs. 5, 8A-B) (col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

generating neighborhood patches consisting of nodes having similarities as determined using levels of the hierarchical structure *(i.e. multiple level of grids, col. 11, lines 18-27)*, and storing said patches in an adequate storage area *(Figs. 5, 8A-B; col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

invoking said hierarchy data and said patches to compute inter-patch confidence values *(i.e. L1 distance, col. 10, line 61 to col. 11, line 5)* between said patches and intra-patch confidence values *(i.e. a radius, col. 11, lines 6-18)*, and storing said values as corresponding lists in an adequate storage area *(col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16)*; and

selecting said patches *(i.e. a subset of grids, col. 11, lines 6-18)* depending on said inter-patch confidence values and said intra-patch confidence values to represent clusters of said document-keyword vectors *(col. 4, line 55 to col. 5, line 17, col. 10, line 61 to col. 11, line 27; col. 13, line 61 to col. 14, line 16).*

As per claim 8, Tang teaches a computer readable medium storing a program for making a computer system execute a method for generating data structures for information retrieval of documents stored in a database, said documents being stored as document-keyword vectors generated from a predetermined keyword list, and said document-keyword vectors forming nodes of a hierarchical structure imposed upon said documents *(i.e. , textual or byte-based*

searches, literature search based on lists of keywords, and vector and matrix based indexing and searching, Abstract), said program making said computer system execute the steps of:

generating a hierarchical structure *(i.e. multigrid tree, col. 4, lines 39-54)* upon said document-keyword vectors and storing hierarchy data in an adequate storage area *(Figs. 5, 8A-B) (col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

generating neighborhood patches consisting of nodes having similarities as determined using levels of the hierarchical structure *(i.e. multiple level of grids, col. 11, lines 18-27)*, and storing said patches list in an adequate storage area *(Figs. 5, 8A-B; col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

invoking said hierarchy data and said patches to compute inter-patch confidence values *(i.e. L1 distance, col. 10, line 61 to col. 11, line 5)* between said patches and intra-patch confidence values *(i.e. a radius, col. 11, lines 6-18)*, and storing said values as corresponding lists in an adequate storage area *(col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16);*

selecting said patches *(i.e. a subset of grids, col. 11, lines 6-18)* depending on said inter-patch confidence values and said intra-patch confidence values to represent clusters of said document-keyword vectors *(col. 4, line 55 to col. 5, line 17, col. 10, line 61 to col. 11, line 27; col. 13, line 61 to col. 14, line 16).*

As per claim 2, Tang teaches said computer system comprises a confidence determination subsystem for computing inter-patch confidence values *(i.e. L1 distance, col. 10, line 61 to col. 11, line 5)* between said patches and intra-patch confidence values *(i.e. a radius,*

col. 11, lines 6-18), and said cluster estimation subsystem selects said patches depending on said inter-patch confidence values to represent clusters of said document-keyword vectors *(col. 4, line 55 to col. 5, line 17, col. 13, line 61 to col. 14, line 16).*

As per claim 3, Tang teaches said cluster estimation subsystem estimates sizes *(i.e. M entries, col. 12, lines 32-51)* of said clusters depending on said intra-patch confidence values *(col. 12, line 51 to col. 13, line 18).*

As per claim 5, Tang teaches the step of estimating sizes *(i.e. M entries, col. 12, lines 32-51)* of said clusters depending on said intra-patch confidence values *(col. 12, line 51 to col. 13, line 18).*

As per claim 7, Tang teaches the step of estimating sizes *(i.e. M entries, col. 12, lines 32-51)* of said clusters depending on said intra-patch confidence values *(col. 12, line 51 to col. 13, line 18).*

As per claim 9, Tang teaches the step of estimating sizes *(i.e. M entries, col. 12, lines 32-51)* of said clusters depending on said intra-patch confidence values *(col. 12, line 51 to col. 13, line 18).*

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Miranda Le
June 16, 2006

CRETA ROBINSON
PRIMARY EXAMINER